

The ChIP-Chip Technology

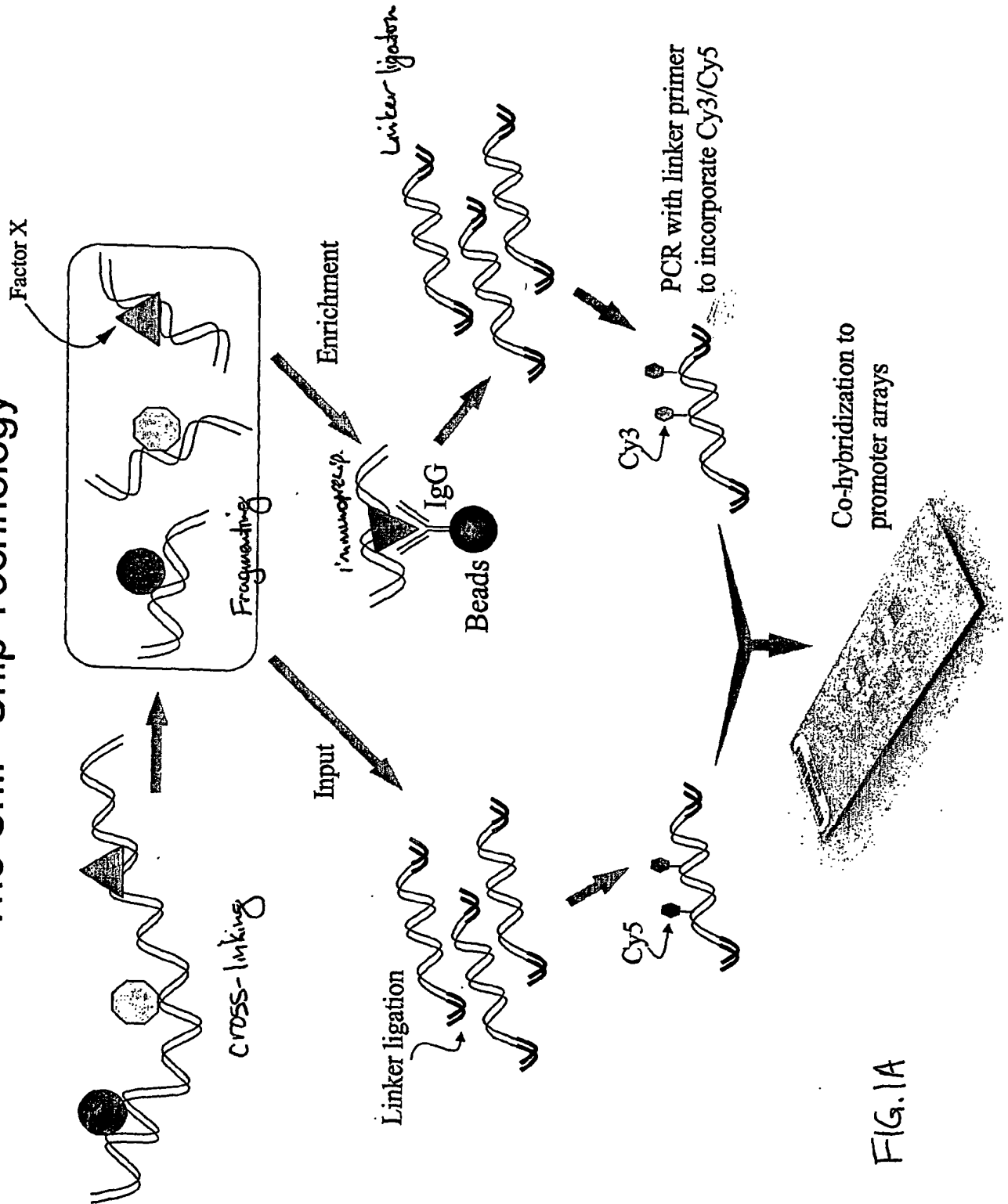
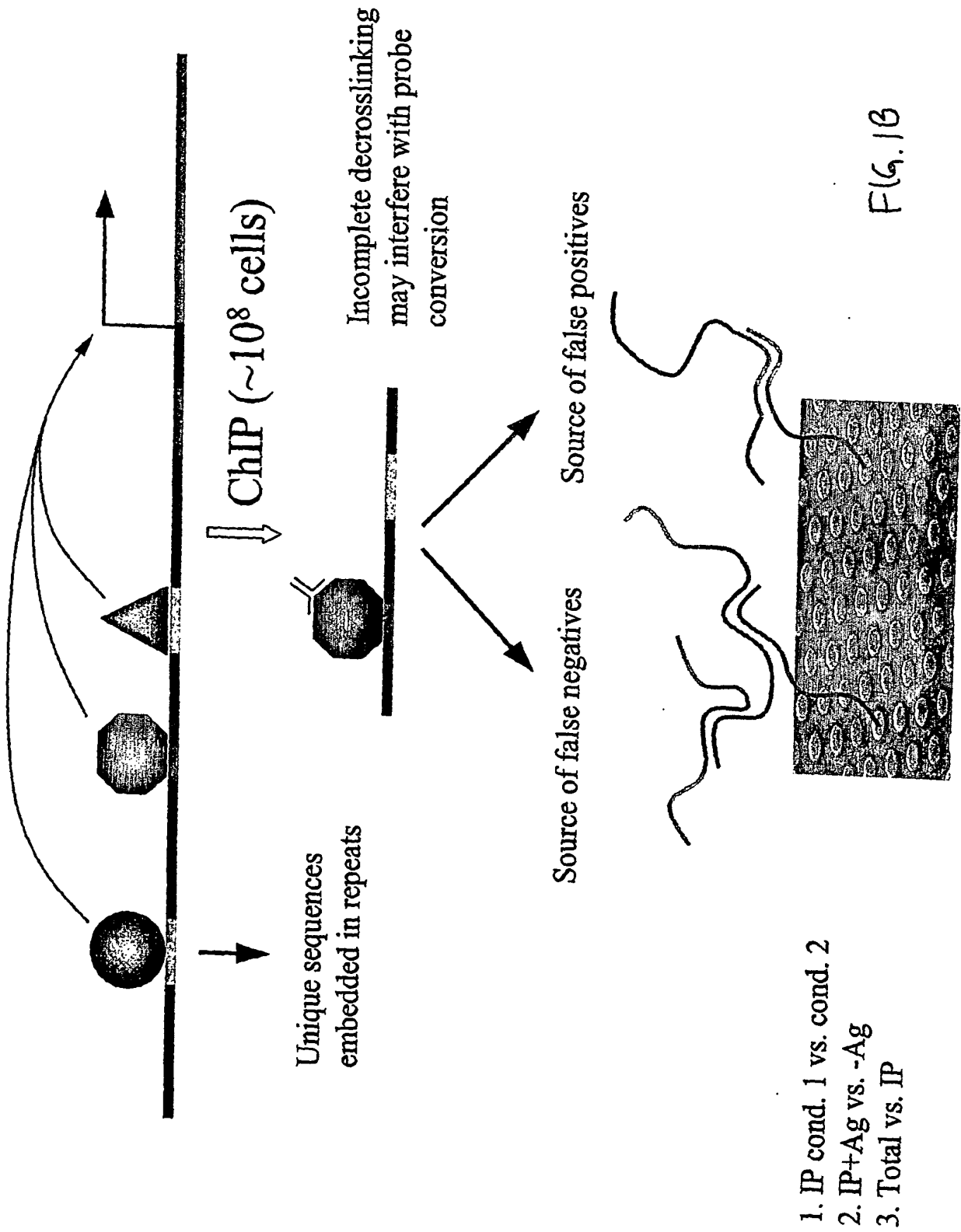
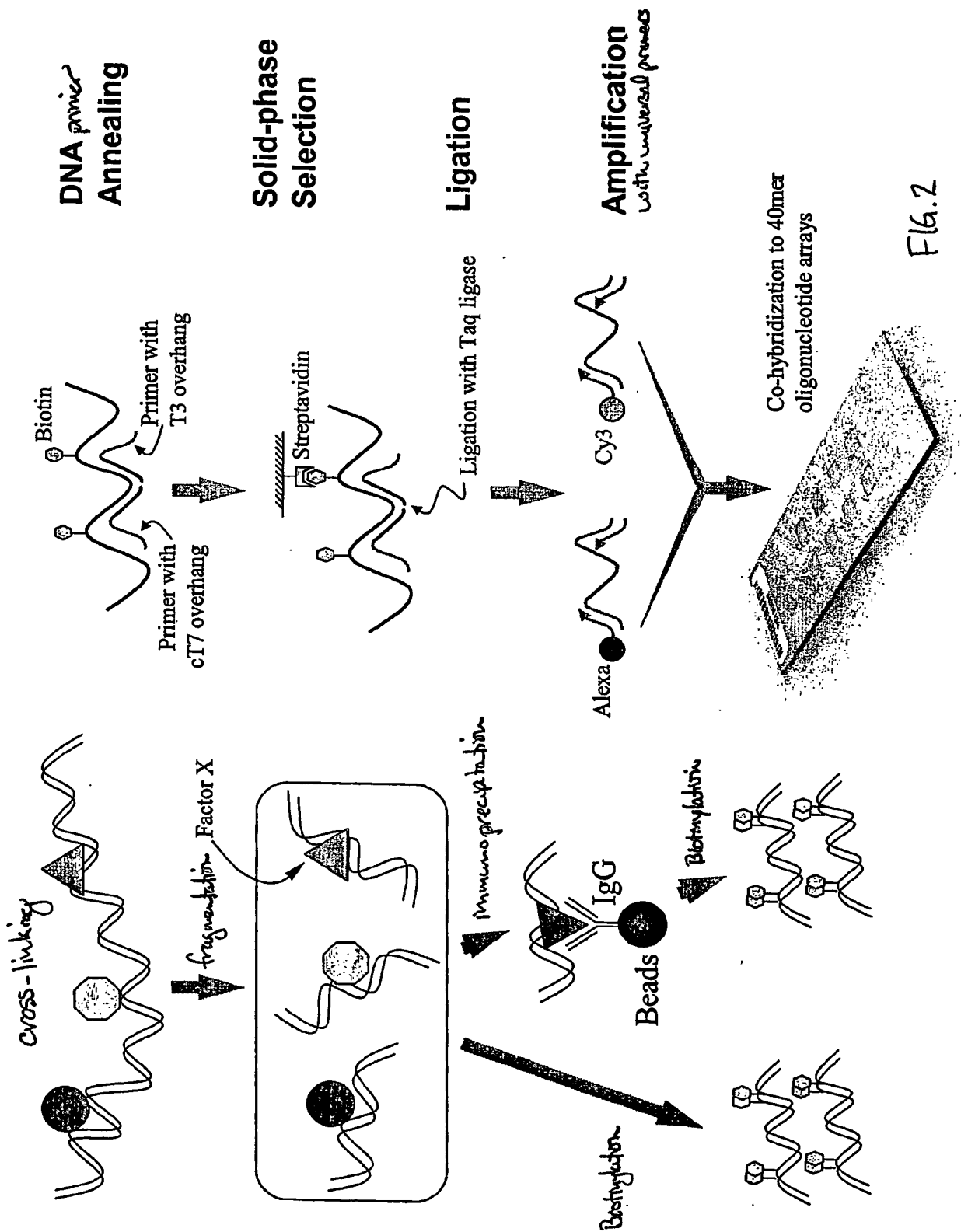


FIG. 1A

Challenges in Genome-Wide Location Analysis



The ChIP-DASL Technology



Specificity and Sensitivity of DASL

Reaction #	1	2	3	4	5	6	7	8	9	10	
Genomic DNA		10 ⁵	10 ⁵	10 ⁵	10 ⁵	10 ⁵				10 ⁵	
Spiked Plasmid DNA			10 ²	10 ³	10 ⁴	10 ⁵	10 ⁵		10 ⁵		
Oligo Pool for Genomic DNA								+	+	+	
Oligo Pool for Spiked DNA	+	+	+	+	+	+	+				

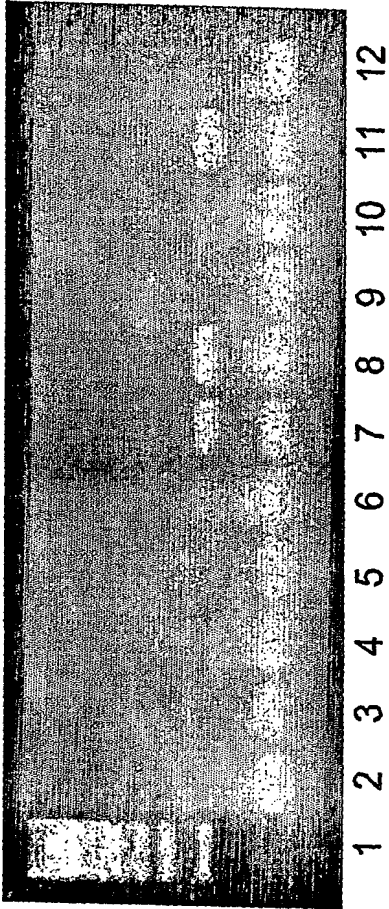


FIG. 3A

Characterization of the ChIP-DASL Technology by using Spiking Controls

WO 2005/007814

PCT/US2004/021450

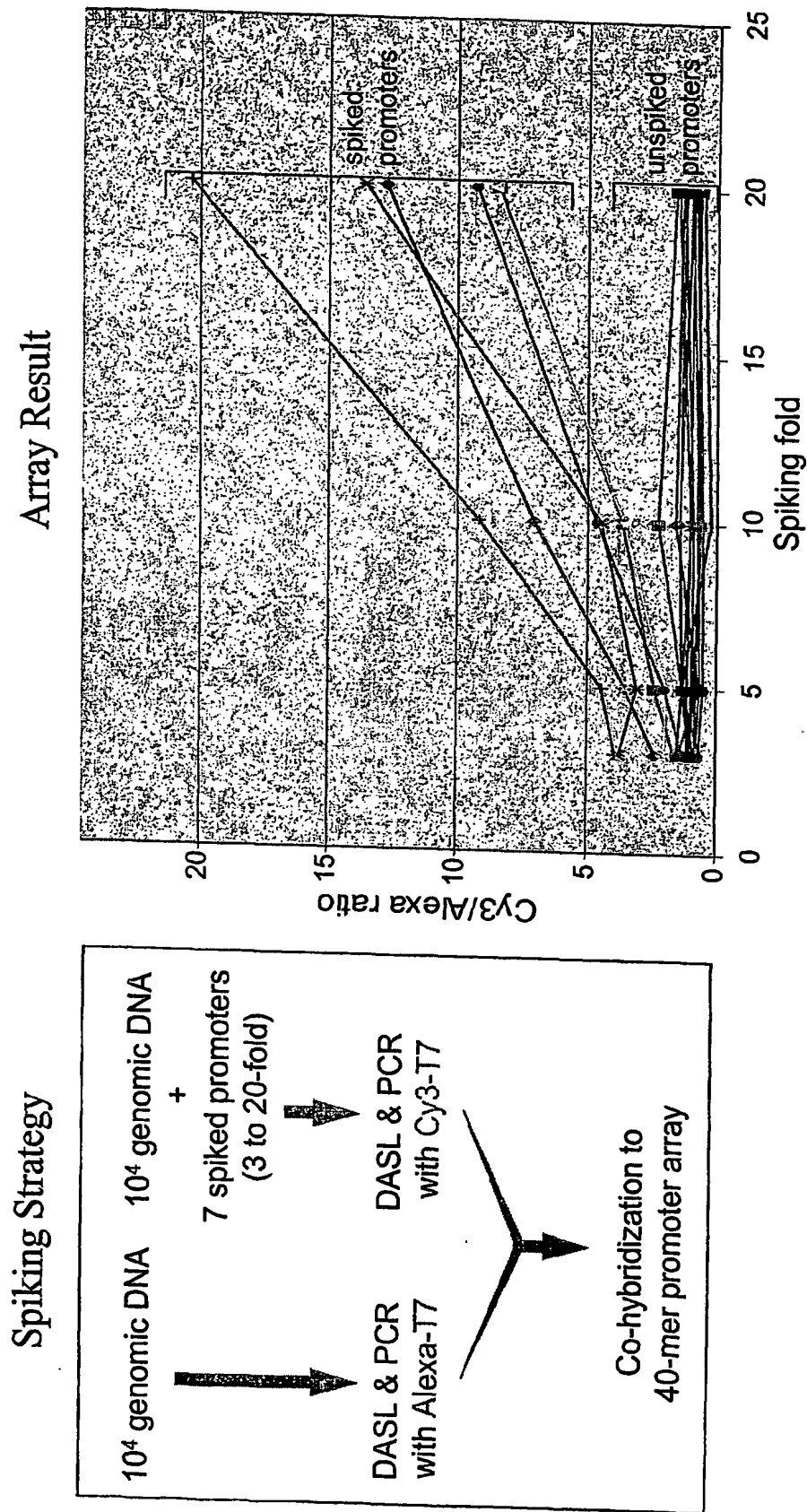
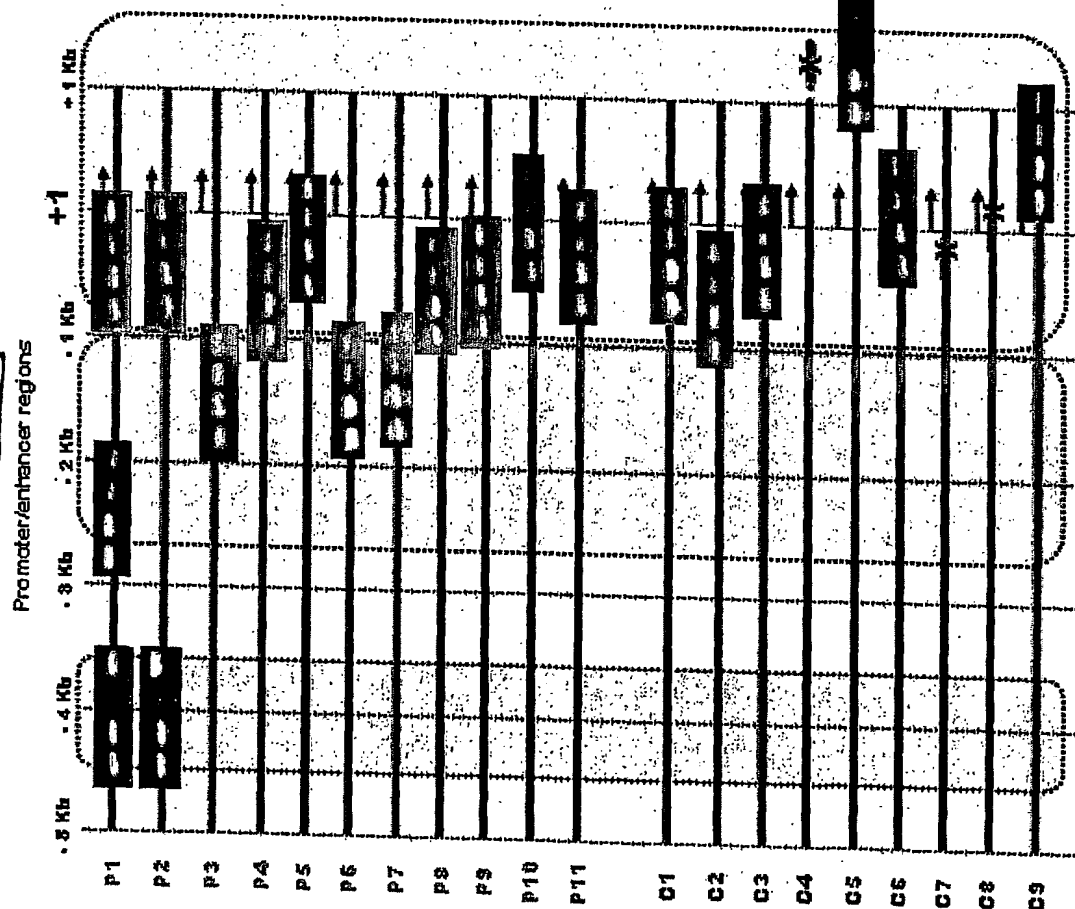


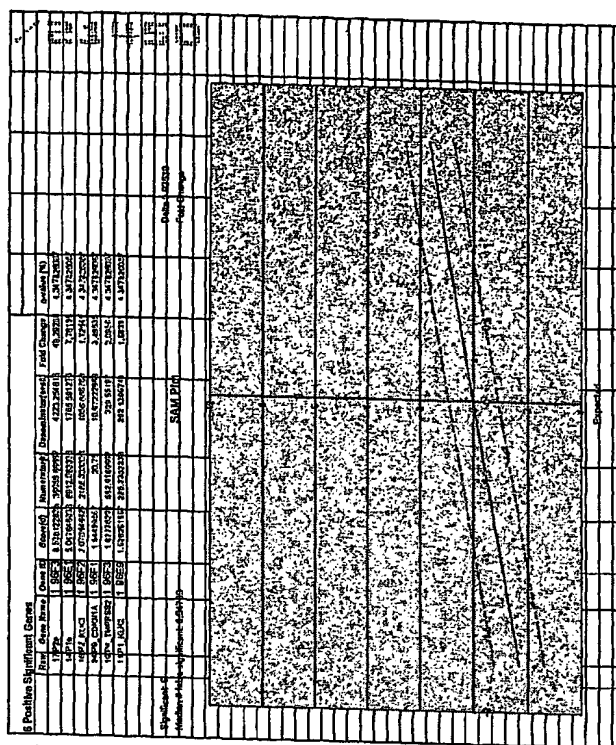
FIG. 3B

Androgen Responsive Promoters in LNCaP Cells

10⁻⁶ 10⁻⁵ 10⁻⁴ 10⁻³ 10⁻² 10⁻¹



SAM analysis (3X)



Significant: 6
Median # false significant: 0.34783
Delta: 0.92539

Fig. 4

5-fold Spiking on the 2K Human Promoter Array

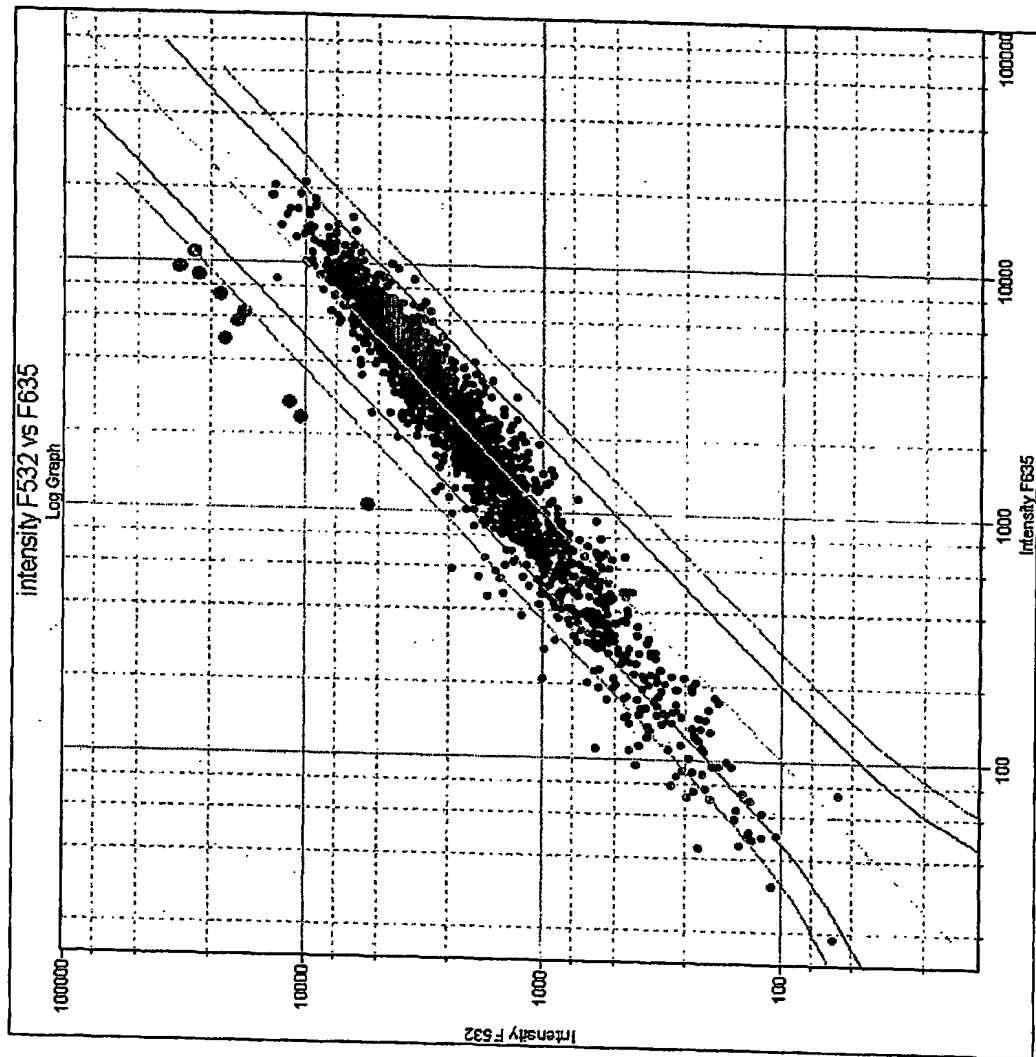


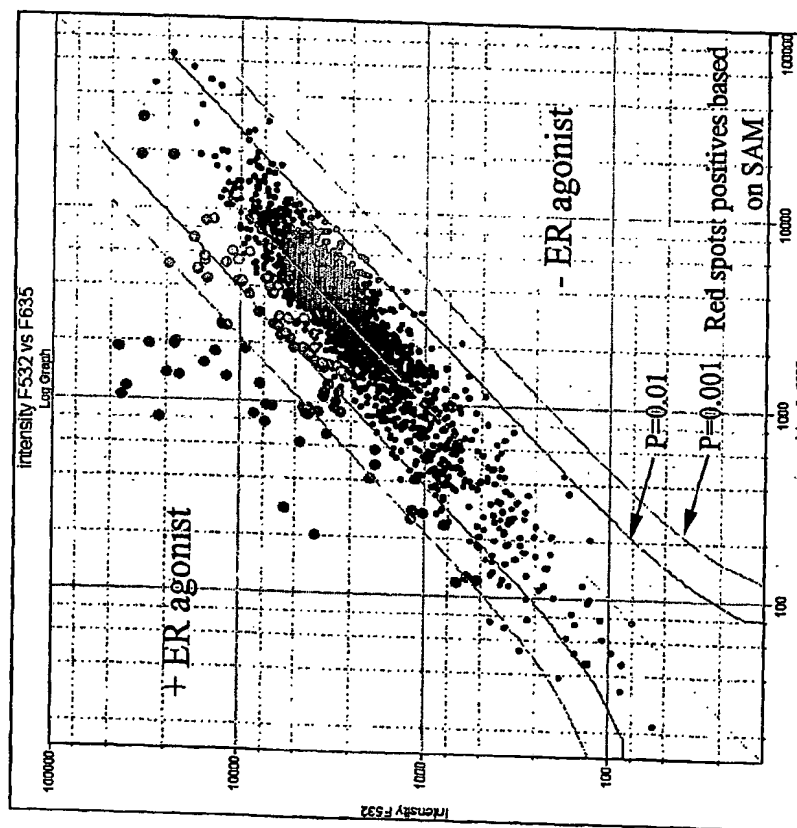
FIG. 5

Identification of Estrogen Receptor Target Genes by DASL

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Single array error model



SAM analysis (3X)



Significant: 94

Median # false significant: 0.39842

Delta: 1.05853

Fig. 6

Base Position
67.74

R_MeH3K4

0.39
19.8

ENM009 R MeH3K4

5500000

Known Genes Based on SWISS-PROT, TrEMBL,
MRNA, and RefSeq

MWP26 | OR52A1 | HBB | AF1101032 |
HBD |
HBD |
HBG2 |
AF110719 |
HBG1 |
HBG1 |
HBG1 |
HBG2 |
HBG2 |
AF110493 |
HBE1 |
OR51B4 |
OR51A2 |

UBQLN3 | TRIM5 |
MSC20470 | TRIM34 |
MSC20470 | TRIM34 |
MSC20470 | TRIM34 |
TRIM6 |
TRIM34 |
TRIM5 |
TRIM34 |
TRIM5 |
TRIM22 |
TRIM22 |

0.25

R_ACH3

ENM009 R ACH3

Fig.7

Mapping Transcription Units by Tiling on the β -globin Locus

Project goal: Mapping functional DNA elements in the ENCODE region

Collaborator: Bing Ren (UCSD)

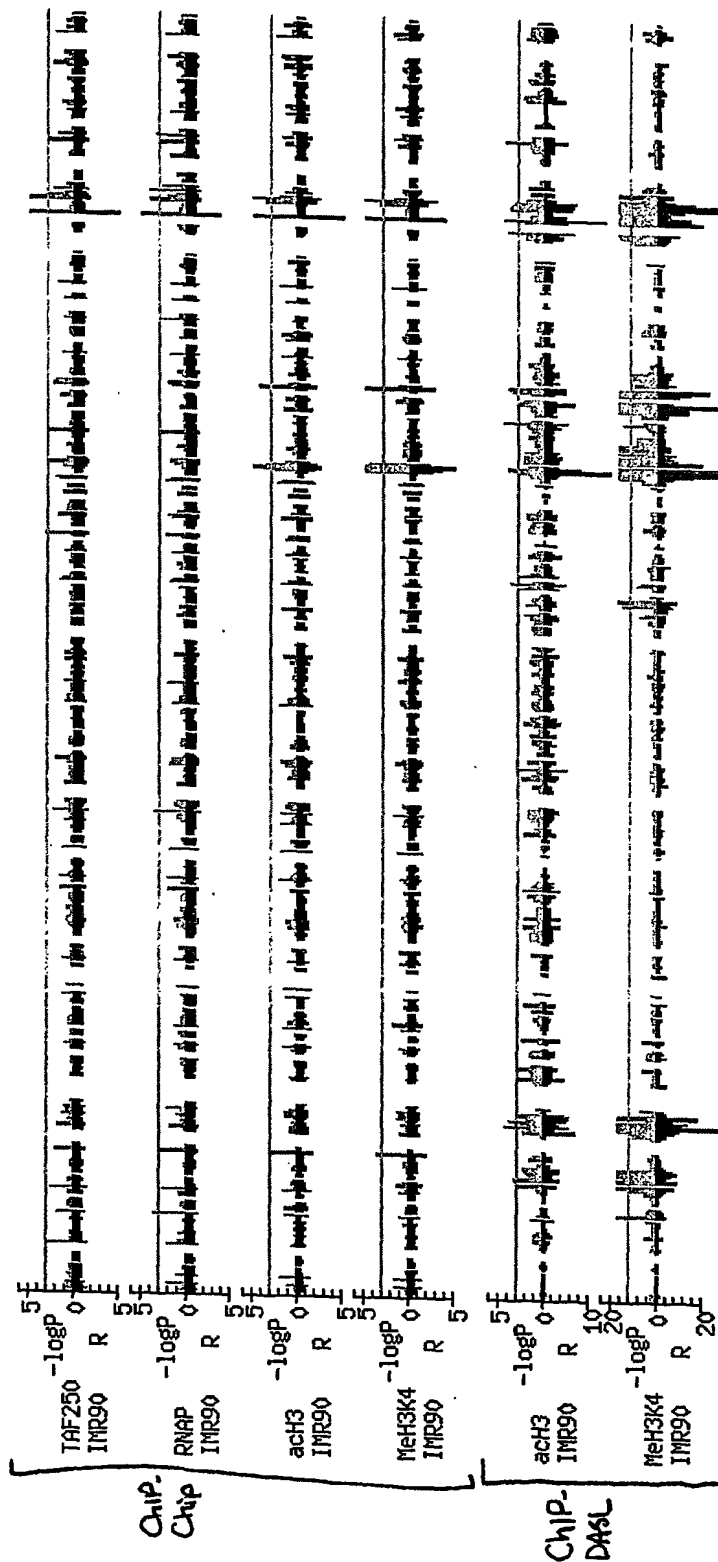
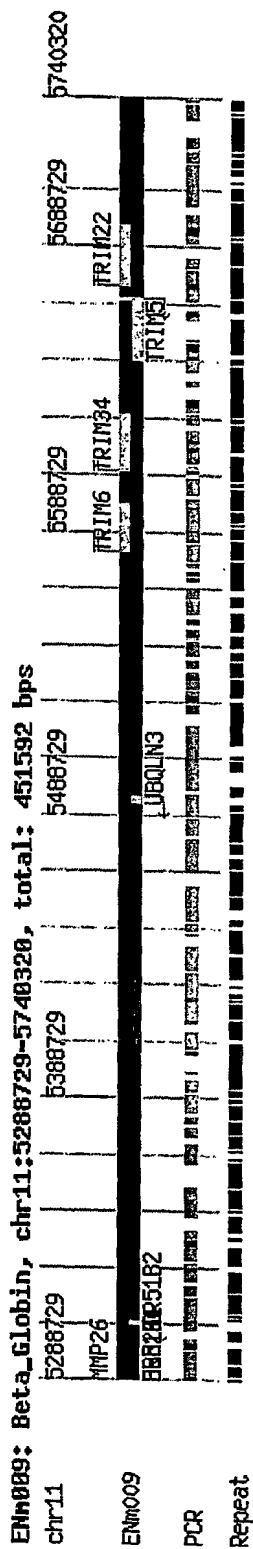


Fig. 8

Additional Applications of DASL

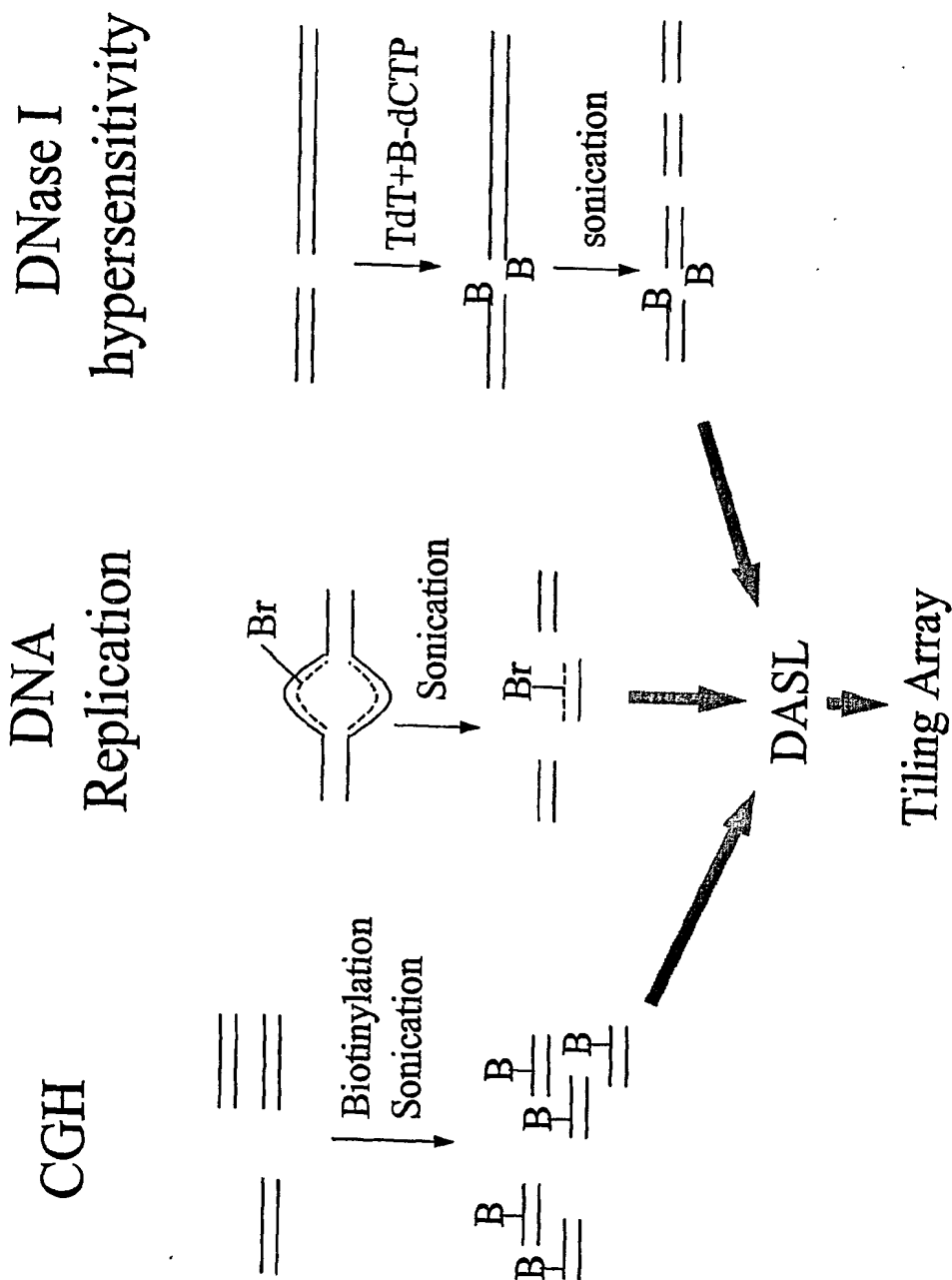


Fig. 9

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